NRC Request for Comment:

1. *In NEI 12-06, Revision 3, Section 11.5.4.f, NEI proposes to modify the time limits for initiation of actions to restore a site's capability to mitigate a beyond-design-basis external event and implementation of compensatory measures. Section 11.5.4.f of NEI 12-06, Revision 0 and Revision 2, states these time limits as 24 hours to initiate actions and 72 hours to implement compensatory measures. In NEI 12-06, Revision 3, Section 11.5.4.f, these time limits are extended to 72 hours for initiation of actions and 7 days for implementation of compensatory measures. The former time limits were previously endorsed as an element of an acceptable method of meeting the Order EA-12-049 requirements for maintaining the strategies and guidelines to mitigate a beyond-design-basis external event in JLD-ISG-2012-01, Revision 0 and Revision 1. The NRC staff seeks input on potential justifications for this extension of the allowable outage times for a licensee's capability to mitigate a beyond-design-basis external event. Input is specifically requested on the potential benefits of extending these time limits, operating experience on time frames actually necessary to implement compensatory measures for the unavailability of similar equipment, and any potential unintended consequences of extending these time limits.*

The industry appreciates the opportunity to provide justification for extending the allowable time for restoration of FLEX capability or implementation of compensatory actions from 72 hours to 7 days. NEI 12-06, Revision 4 maintains the 24-hour initiation completion time limit contained in NEI 12-06, Revision 2. Thus, the proposed change from 24-hour initiation to 72-hour initiation in NEI 12-06, Revision 3 has been withdrawn.

As described in NEI 12-06, the objective of FLEX is to establish an indefinite coping capability to prevent damage to the fuel in the reactor and spent fuel pools and to maintain the containment function by using plant equipment and FLEX equipment. This capability addresses both an extended loss of ac power (ELAP) and loss of normal access to the ultimate heat sink (LUHS) which could arise following external events that are within the existing design basis with additional failures and conditions that could arise from a beyond-design-basis external event. As such, FLEX provides an additional layer of defense-in-depth to minimize risk from these potential very rare events. This includes any initiating events and/or combination of failures that could lead to an ELAP and LUHS. FLEX can provide mitigating capabilities in these scenarios beyond that which already exists at the site.

NEI 12-06, Revision 4 includes the following language:

> *If FLEX equipment or connections become non-functional such that the site FLEX capability (N) is not met, initiate actions (e.g., enter the condition into a corrective action or work management program) within 24 hours to restore the site FLEX capability (N) and implement compensatory measures (e.g., use of alternate suitable equipment or supplemental personnel) within 7 days or in advance of a forecast external event.*

The overall risk increase of extending the allowed functionality interval from 3 to 7 days is driven by the following factors and is very small.

- The risk of a Beyond Design Basis External Event requiring FLEX mitigating strategies to avoid core damage is very low. Given the margins associated with the installed plant equipment, many beyond design basis external events could potentially avoid core damage with existing plant capabilities. The likelihood of an event (or an event followed by combinations of failures) that could only be mitigated by FLEX equipment is therefore assessed to be very small.

- Some of the risk of a BDBEE is from forecast events (e.g., severe weather or flooding conditions) upon which compensatory actions would make it unlikely that the FLEX equipment would be unavailable prior to the event. This is reinforced in NEI 12-06, Revision 4, whereby compensatory measure are taken in advance of a forecast external event.
- An additional outage time of 4 extra days would involve just over a 1% increase in exposure time on an annualized basis (i.e., 4 days / 365 days / year). This amounts to approximately 0.7% over an 18 month fuel cycle.

The combination of these considerations indicates that the risk increase of extending the FLEX allowed functionality time from 3 to 7 days is very small.

In addition to the risk considerations, operating experience has shown that the current 72 hour timeframe is unnecessarily burdensome, could detract from other higher priority activities and is not commensurate with the probability of occurrence of a beyond design basis event.

- Operating experience with the existing 72 hour restoration time have presented challenges to the industry and are overly restrictive in comparison to out of service times allowed for safety related equipment. For example, FLEX depends on RCIC, which can be out of service for 14 days.
- As an example, when equipment is identified as non-functional on a Friday that requires vendor support to repair, receiving a vendor response over the weekend is difficult with the commercial nature of the equipment and the normal staffing of these vendors. Also, travel on the weekend is more difficult than during normal work week so an extension beyond 72 hours is needed.
- The site FLEX N capability should be treated the same as another train of the EDG, FW or Electrical. These divisions typically have a 7 day to 14 day LCO.

NRC Request for Comment:

2. *In JLD-ISG-2012-01, Revision 1, the NRC staff endorsed the NEI 12-06, Revision 2, Section 11.5.4.b 45-day time limit for having an available but unprotected set of equipment as part of the site's capability to mitigate a beyond-design-basis external event. The 45-day time limit aligned with the standard 6-week short work cycle period and allowed sufficient time for the pre-staging of one set of equipment in a location that is not entirely protected from all external hazards for the purpose of shutdown risk management during outages, which typically have durations less than 45 days. In NEI 12-06, Revision 3, Section 11.5.4.g, this time period is reduced to 14 days, which could conflict with the pre-staging of equipment for risk management during outages. The NRC staff seeks input on appropriate methods of control of pre-staging of equipment for shutdown risk management.*

The industry has included a new provision in 11.5.4.f to address pre-staging of FLEX equipment.

Additional Comment:

The language in the statements of consideration accompanying the draft "Mitigating Beyond Design Basis Events" rulemaking indicate a lack of clarity in explaining the difference between an "ELAP" and a "loss of all ac". This distinction is very important because it differentiates between what is required by Order EA-12-049 as an initial condition for mitigating strategies, and what are required as contingency actions. NEI offered text to clarify this difference in our comments on the draft

rulemaking and on draft Regulatory Guide 1.226. We suggest the same text here as a comment on Draft of Revision 2 to JLD-ISG-2012-01 in order to maintain consistency.

The applicable text in Draft Revision 2 to JLD-ISG 2012-01 is on page 4 of the enclosure, first paragraph of section 1.2. The suggested clarification is noted in redline text below:

> "The difference between the conditions described in NEI 12-06 (ELAP) and attachments 2 and 3 of Order EA-12-049 (loss of all ac power) is addressed through the development of contingencies~~, as described below~~. Specifically, the damage state of a loss of all ac power condition concurrent with LUHS in the Mitigation Strategies Order was implemented first through the assumption of an ELAP to the onsite emergency ac buses, while allowing ac power from the inverters to be assumed available, in order to establish event sequence and the associated times for when mitigation actions would be assumed to be required. Secondly, to address the MBDBE Rule and the Mitigation Strategies Order requirement for a loss of all ac power, including ac power from the batteries (through inverters), contingencies are included in the mitigation strategies to enable actions to be taken under those circumstances (e.g., sending operators to immediately take manual control over a non ac-powered core cooling pump). These contingencies, which are discussed below, could be implemented if ac power fed by station batteries through inverters is not available."